Claims

What is claimed is:

1   1.   A method for implementing coexistence and cooperation
2 between system firmware and debug code in a test system comprising the
3 steps of:
4   providing a service processor coupled to a machine under test for
5 sending system firmware test functions to said machine under test and
6 receiving test data from said machine under test;
7   providing a host computer coupled to said service processor for
8 sending bring-up tool debug test functions to said machine under test and
9 receiving test data from said machine under test;
10   starting said system firmware test functions without user intervention
11 on initial power-on routine of the machine under test;
12   receiving a user request with said host computer and notifying said
13 service processor; and
14   starting said bring-up tool debug test functions responsive to said
15 user request.

1   2.   A method for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 1 wherein the step of providing said service processor coupled to a
4 machine under test for sending system firmware test functions to said
5 machine under test and receiving test data from said machine under test
6 includes the step of storing system firmware in said service processor for
7 sending said system firmware test functions to said machine under test and
8 receiving said test data from said machine under test by said service
9 processor.

1   3.   A method for implementing coexistence and cooperation
2   between system firmware and debug code in a test system as recited in
3   claim 1 wherein the step of providing said host computer coupled to said
4   service processor for sending bring-up tool debug test functions to said
5   machine under test and receiving test data from said machine under test
6   includes the step of storing a bring-up tool in said host computer for sending
7   bring-up tool debug test functions to said machine under test and receiving
8   test data from said machine under test.

1   4.   A method for implementing coexistence and cooperation
2   between system firmware and debug code in a test system as recited in
3   claim 1 includes the steps of identifying a failure in said machine under test
4   with said system firmware test functions, stopping said system firmware test
5   functions, and notifying said host computer.

1   5.   A method for implementing coexistence and cooperation
2   between system firmware and debug code in a test system as recited in
3   claim 4 includes the step of receiving a user request and starting said bring-
4   up tool debug test functions responsive to said user request.

1   6.   A method for implementing coexistence and cooperation
2   between system firmware and debug code in a test system as recited in
3   claim 5 includes the step of completing said bring-up tool debug test
4   functions and starting said system firmware test functions without user
5   intervention.

1   7.   A method for implementing coexistence and cooperation
2   between system firmware and debug code in a test system as recited in
3   claim 1 wherein the steps of providing said service processor coupled to said
4   machine under test for sending system firmware test functions to said
5   machine under test and receiving test data from said machine under test;
6   and providing said host computer coupled to said service processor for
7   sending bring-up tool debug test functions to said machine under test and
8   receiving test data from said machine under test includes the step of
9   providing said service processor with a scan controller coupled to said
10 machine under test and said system firmware test functions and said bring-
11 up tool debug test functions controlling access to the scan controller.

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1   8.   A method for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 7 includes the step of storing system firmware in said service
4 processor for controlling said scan controller for sending said system
5 firmware test functions to said machine under test and receiving said test
6 data from said machine under test by said service processor.

1   9.   A method for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 8 includes the step of storing a bring-up tool in said host computer for
4 controlling said scan controller for sending bring-up tool debug test functions
5 to said machine under test and receiving test data from said machine under
6 test.

1   10.   A method for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 1 includes the step of completing said bring-up tool debug test
4 functions.

1   11.   A method for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 10 includes the step of starting said system firmware test functions
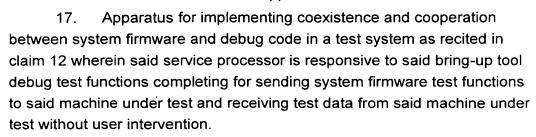4 without user intervention.

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1 12.   Apparatus for implementing coexistence and cooperation
2 between system firmware and debug code in a test system comprising:
3   a service processor coupled to a machine under test for sending
4 system firmware test functions to said machine under test and receiving test
5 data from said machine under test;
6   a host computer coupled to said service processor for sending bring-
7 up tool debug test functions to said machine under test and receiving test
8 data from said machine under test;
9   said service processor including a scan controller for transferring said
10 system firmware test functions and said bring-up tool debug test functions to
11 said machine under test and receiving said test data from said machine
12 under test; and
13   said system firmware test functions and said bring-up tool debug test
14 functions controlling access to said scan controller.

1 13.   Apparatus for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 12 wherein said scan controller is coupled to said machine under test
4 by a JTAG bus.

1 14.   Apparatus for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 12 wherein said host computer coupled to said service processor
4 includes system firmware for providing a graphical user interface.

1 15.   Apparatus for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 12 wherein said host computer is responsive to a user request for
4 sending bring-up tool debug test functions to said machine under test and
5 receiving test data from said machine under test.

1 16.   Apparatus for implementing coexistence and cooperation
2 between system firmware and debug code in a test system as recited in
3 claim 12 wherein said service processor is responsive to an initial power-on
4 routine of the machine under test for sending system firmware test functions
5 to said machine under test and receiving test data from said machine under
6 test without user intervention.

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1   17.   Apparatus for implementing coexistence and cooperation
2   between system firmware and debug code in a test system as recited in
3   claim 12 wherein said service processor is responsive to said bring-up tool
4   debug test functions completing for sending system firmware test functions
5   to said machine under test and receiving test data from said machine under
6   test without user intervention.

1   18.   A computer program product for implementing coexistence and
2   cooperation between system firmware and debug code in a test system
3   including a service processor coupled to a machine under test and coupled
4   to a host computer, said computer program product including a plurality of
5   computer executable instructions stored on a computer readable medium,
6   wherein said instructions, when executed by said service processor, cause
7   the service processor to perform the steps of:
8   starting system firmware test functions without user intervention on
9   initial power-on routine of the machine under test;
10   sending system firmware test functions to said machine under test
11   and receiving test data from said machine under test;
12   receiving a user request with said host computer and notifying said
13   service processor; and
14   starting said bring-up tool debug test functions responsive to said
15   user request; and
16   sending bring-up tool debug test functions to said machine under test
17   and receiving test data from said machine under test.

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